

Non-invasive Optical Detection of Internal Bleeding

ABSTRACT

A rapid and non-invasive optical method and device for diagnosing internal bleeding or hemorrhage in a human body by detecting leaked blood comprising administering a fluorescent compound parenterally; providing a light beam containing a wavelength absorbable by the fluorescent compound, wherein the light beam is illuminated at and transmitted through a tissue region into the human body; and analyzing fluorescence signal produced from the fluorescent compound in the leakage of blood for diagnosing the presence or absence of internal bleeding. The invention provides an accurate, rapid, easy-to-use, and inexpensive method for diagnosing internal bleeding, particularly in the fields of gynecology, obstetrics, neonatology, surgery bleeding, post-surgery bleeding, emergency medicine, and veterinary medicine for cases suspected of internal hemorrhage.